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ABSTRACT

Computer-aided learning provides motivation, student responsibility, and workplace competency skills. Because of recent research on at-risk and non-traditional learners, along with the demand for industry-driven instruction, the administration at this vocational/technical school realized that the mere existence of technology is insufficient to motivate students and teachers. Technology has to be integrated into the curriculum. A successful example of this integration is Pittsburgh Technical Institute's two-step program utilizing DIALOG's "Classmate Instruction Program." Online instruction is given first to all beginning students, and again to all final term students as a refresher. Students are taught how to search multiple databases, and how to interpret and evaluate the results. Throughout their coursework, students are allowed to access DIALOG at any time. In order to be fully aware and supportive of the program's goals, all teachers and staff were given a training workshop before the online instruction began. The integration of online searching into the curriculum has produced many positive results: an increase in perceived student enthusiasm; improved student performance, as proven by grade point average and lower attrition rates; increased peer assistance; enhanced employability; and sharpened study and communication skills. (MAS)

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Online for At-Risk Students
A Success Story

by Kate Sawyer

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Online for At - Risk

We live in exciting times. We have, in a relatively short period of time, moved from an industrial society to an information society. We've gone from the Industrial Revolution into the Information Revolution where knowledge will be the driving force of society, and the measure of wealth will be access to that information.

Significant improvements in the power of computers and of communications technology have given us tools through which education can be totally transformed. New technology has and will have the potential to change the learning/teaching process as never before in history--from the traditional passive learning to active, or even more importantly, in interactive. Today the power to fundamentally change the way we learn is literally "at our fingertips".

There is a growing realization that learning the same things the same way we learned twenty years ago isn't enough to prepare students for today's "global" environment. The old lecture format is no longer viable. Traditional methods and materials used to teach students of an MTV, Nintendo and p.c. generation are clearly out of step with the needs and expectations of today's world. Entry level workers will work with more sophisticated tools, and will have to respond to ongoing change. There is a growing realization that we need to rethink how we select, use, and integrate the tools now available to take students into the 90's and beyond.

Yes, these are indeed exciting times, but also very challenging and competitive times, especially for educators. Institutions of higher education that exist today find themselves operating in perhaps one of the most extraordinary of times. We are clearly at one of those junctures in life where what happens in the next several years will pretty much shape the entire next decade and most likely well beyond. That will not only be limited to what happens in the education world, but also in the work place and in our daily life. Changing demographics, declining budgets, workforce dissatisfaction, and social and cultural changes are a driving force in the integration of new technology into the educational process. This is especially true of two year private "career" or vocational schools, who are competing more and more with traditional college students and money. Many students entering post secondary education, (especially two year schools,) lack a strong foundation of basic skills, and are ready neither for more schooling nor for work. They often see little connection between what they do in school and how they expect to make a living. They can be classified as "at risk" or, at best, "non traditional". These include students with low achievement levels or low academic performance, students with behavior problems or conditions such as pregnancy, substance abuse, poor attendance or disruptive behavior. These students must strengthen their skills level while at the same time

achieving higher levels of academic and work place competence.

As the skills levels required for today's jobs climb, many educators have found it increasingly difficult to fit all this necessary training into their programs, and are constantly looking for new ways to incorporate a higher level of skills into their already full curriculum. There is a growing consensus that schools must determine new standards, curricula, and teaching methods and materials if they are to produce employable graduates. Graduates of two year "career" or vocational schools must not only be technologically literate, they must be technologically astute. They must understand technology to the level that they can apply what they learn to the workforce. Students need to be better critical thinkers and problem solvers in addition to being able to read and write at a minimum level of competency. They must have some skills utilizing technology. Just as business has had to adapt its methods and technology to remain competitive in the global workforce of today, schools need to find ways to make basic competencies relate to the workforce. The pressure to modernize curricula with technology is felt at all levels of the educational process, but is particularly acute at the technical/vocational post secondary level--the gateway to work. If these schools do not deliver this skill to their students, employers will go elsewhere for their workforce and these schools will be out of business.

In 1991 the Secretary's Commission on Achieving Necessary Skills produced **What Work Requires of Schools**, and later **Learning A Living**, defining work place competencies and foundation skills that they found lacking in today's entering workforce. They were: communication, problem solving, teamwork, initiative, and adaptability. They state that the basic skills gap between what business needs and the qualifications of workers available is widening. They also found that while educational reforms have brought undeniable progress, non college bound and at-risk dropouts have been least affected. Unfortunately, non college bound and at-risk dropouts are a large percentage of the career school population, so finding ways to bring educational reforms using new technology has been and will continue to be an important challenge to the higher administration of these schools.

Pittsburgh Technical Institute is a small, private, post-secondary "career" or vocational/technical school located in downtown Pittsburgh, Pa. It offers degrees in specialized technology for Computer Graphics, Interior Design, and CAD and Computer Systems management. The student body, needless to say, is very diverse,and can be classified as non-traditional. After reading the **SCANS** reports, and in working closely with local industry, the incoming President of PTI was concerned with the challenges faced by schools such as PTI to assure industry workforce preparedness for students who were probably lacking basic skills competencies when they entered the programs.

The administration was well aware that certain kinds of learning environments had the best results with at-risk or non-traditional students, and had worked to focus programs on the link between motivation and success. They also were very aware

that computer-aided learning could provide motivation, skills, student responsibility, and at the same time teach workplace competency skills. Using the **SCANS** reports as guides, the new administration tion gave the faculty the imposing task of developing a new curriculum model that would incorporate new technologies, computer-assisted instruction, and workforce competency skills, while adjusting to vocational students' individual learning styles, knowledge, skills, and desires.

While researching motivation, computer-assisted learning, workforce readiness, at-risk students, etc. for the new administration, I was struck with the idea that many of the deficiencies and technology skills could be integrated into the PTI curriculum utilizing online searching skills.

While there seems to be ample research on the value and rewards of teaching secondary school students online skills, there seems to be little on the benefits of teaching these same skills to vocational/technical students at the post secondary level, even though such skills have been shown to effect educational motivation and success--two lacking skills in these types of students. The benefits of developing critical thinking and problem solving skills, combined with hands-on interactive learning, real world relevancy and "in context" applications, immediate feedback, and guaranteed success for all levels of learners, seemed to be a perfect solution to integrate technology, new teaching processes, computer aided learning and basic workplace competencies for this type of learner. In addition, online searching could incorporate visual, tactile, and listening nodes of learning in a non-judgmental private environment, where students could proceed at their own level.

A team consisting of the President, Vice President of Career Development, the Librarian, and several core Program Directors decided to develop a two step integrated curriculum utilizing DIALOG's *Classmate Instruction Program. Classroom* was chosen as best able to meet the needs of non-traditional and at-risk students while teaching workplace competencies and strengthening basic skills.

Online database searching has been available to students at Pittsburgh Technical Institute since the opening of the Learning Resources Center two years ago. The primary purpose for teaching online searching is to introduce students to an information service that would enable them to gain access to current technology and computer assisted instruction, while at the same time learning higher level thinking skills necessary for workforce readiness. A two-step integrated unit on online searching using Dialog's Classmate Instruction Program was selected as best able to adjust to PTI students' individual learning styles, knowledge, speed, skills, and desires while at the same time meeting the instructional needs of the school.

The librarian and two library assistants operate PTI's online search program. Online instruction is given to all beginning students as part of their Student Success course, and again to all final term students in a "refresher" course. They

are also allowed to access Dialog using Classmate at any time after completing the basic course in online searching.

The librarian attended both Dialog's ***Basics Course and Teach the Teacher Classmate*** seminars. In addition, all faculty and staff were given instruction on what online searching could do for students, as well as the basic Teach the Teacher workshop during in-service days. This training has the effect of providing all disciplines with the opportunity to incorporate online searching across the curriculum.

The integration of online searching into the curriculum has surpassed all expectations. Admissions representatives now routinely display the LRC's Dialog online searching program as an integral component of the high technology found in the school's programs. Teachers and staff comment on student enthusiasm for the program, and report enhanced student performance as measured by grade point average and lower attrition rates. Students bring new learning skills to their other classes, and many incidentally help other students become more successful. Employability has been perceived as enhanced, and students seem to have more productive studying skills, communication skills and relationships within the school.

Online instruction is integrated into all parts of the PTI curriculum as it is introduced in a mandatory beginning course called Student Success, and again in a mandatory final term class called Career Development. Classroom Success is a course designed to increase student educational success by assisting him/her in obtaining the necessary skills to reach his/her educational goals and workplace competency. Topics in this course include time planning, communication skills, study techniques and other **SCANS** competencies that are necessary for today's students. As part of the communications section of this class, students are given a 1½ hour class on online searching with a required assignment requiring the use of online information. Students are given an overview where the range of information available today is emphasized, as well as retrieval techniques, and database choices. Students must find pertinent information from at least three different types of information sources, and either give an oral or written report on their research.

Students are taught how to search as well as how to interpret the results, how to search multiple databases, how to critically analyze the relevancy of the information and the type of retrieval available to them (bibliographic vs. full text).

The class consists of lecture, demonstration, and hands-on interactive practice. After the initial training, students are required to submit their printed results along with their finished paper. In the Career Development class students are given a "refresher" lecture and overview. They are asked to locate information on a company in their field or a new product development utilizing at least two types of information and present it to the class in an oral or written presentation.

Again, database choices are highlighted, as well as type of information and interpretation of the results. Students must also show their printed search results.

Online instruction is part of all curricular areas. As discussed earlier, two mandatory classes were selected initially to best integrate online instruction into the new industry driven curriculum adopted by Pittsburgh Technical Institute two years ago. These courses were chosen because all students would be exposed to this type of information and communication technology, and would be able to relate newly learned skills to their educational goals and success.

Curriculum units begin with basic instruction using traditional handouts, as well as information handouts on communications techniques and critical thinking and problem solving skills. The librarian works with the instructors to determine projects and needs. As previously described, a Graphic Design Student Success class may be asked to research a modern graphic designer or typeface design, while Interior Design students might be asked to research an interior design style or person. Searchers are instructed on which databases are best suited to their informational needs, how to decipher the information, and how best to communicate their information to each other and to their class. Full text databases are used whenever possible.

Career development classes may be asked to find five firms in their field in a certain locale, or present a report on new industry developments for their presentation. Each Program Director works with the Librarian to develop a series of assignments that are pertinent to more than one class.

Students are required to fill out a search work sheet before logging on, and also fill out a survey form when finished. A glossary and outline are included in every student packet when they come for online searching, and individual training sessions are also available during the day.

The administration of Pittsburgh Technical Institute fully supports online instruction and information technology, and was and is a determining force in the success of this program. Because of the recent research on at-risk and non-traditional learners, along with the demand for industry-driven instruction, the administration realized that the mere existence of technology would not be enough to motivate students or teachers--it would have to be effectively integrated into core curriculum.

As the Learning Resources Center was in its first year of operation, it was a relatively simple task to integrate electronic access to information into PTI's newly developed "industry-driven" curriculum.

All costs, including teacher training, equipment, and supplies, etc. were assumed by the LRC from the beginning, thereby making its integration easier on individual program budgets.

All teachers and staff were given a training workshop during inservice program time before online instruction was given to students, so that they would be fully aware and supportive of the program goals.

The librarian was given permission to attend ***Databases in Schools*** conferences as well as local training and workshops. In addition, all admissions representatives were given a tutorial on the value of teaching online searching, which they incorporated into their student tour and orientation programs.

Faculty and staff support has far exceeded initial expectations, especially when the fact that most career school faculty are not usually "traditional" educators with teaching degrees and oftentimes are unaware of the potential learning experiences to be gained from types of curriculum applications. Once they saw how local newspapers and full text articles could be retrieved, they were staunch supporters of this program, oftentimes expecting their classes to use online searching for class activities. They realized where curriculum is integrated around a theme, and where their students were actively engaged in researching information using technology to accomplish a task and make meaning out of their assignments, students were found to flourish--especially their at-risk students.

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